

(PCR), wherein the mutation rate and total number of mutations in the amplified DNA is adjusted by adjusting the concentrations of  $Mg^{2+}$ ,  $Mn^{2+}$  and of the deoxynucleotides and by adjusting the number of cycles;

- b) optionally one or more hydrolase genes mutated according to step a), or mixtures of one or more starting hydrolase genes and one or more hydrolase genes mutated according to step a) are mutagenized by enzymatically fragmenting said genes, followed by enzymatic reassembly of the fragments produced to give complete recombinant hydrolase genes;
- c) the mutated hydrolase genes obtained according to step a) or b) are transformed into a host organism; and
- d) hydrolase mutants having improved properties, expressed by transformants obtained in step c), are identified by a test method.

*a*  
*37*      *36*  
The process according to claim 4, wherein an average mutation rate of 1-2 base substitutions, per one hydrolase gene to be mutagenized, is adjusted in the PCR in step a) by adjusting the concentrations of  $Mg^{2+}$ ,  $Mn^{2+}$  and of the deoxynucleotides.